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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,599	12/18/2001	Robert A. Marshall	062891.0574	7923
5073 7590 10/13/2009 BAKER BOTTS L.L.P. 2001 ROSS AVENUE SUITE 600 DALLAS, TX 75201-2980				
EXAMINER MOORE JR, MICHAEL J				
ART UNIT 2457		PAPER NUMBER		
NOTIFICATION DATE 10/13/2009		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ptomail1@bakerbotts.com
glenda.ornanfia@bakerbotts.com

Office Action Summary

Application No.	Applicant(s)	
10/025,599	MARSHALL ET AL.	
Examiner	Art Unit	
MICHAEL J. MOORE, JR.	2467	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 7-16, 45-49 and 51-72 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-16, 45-49 and 51-72 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The current amendment made by Applicant to claim 52 to obviate the claim rejection under 35 U.S.C. § 112, 2nd paragraph presented in the previous Office Action is proper and has been entered. This particular rejection has been withdrawn.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 45-49, 51-54, and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gammel et al. (U.S. 5,974,363) (hereinafter "Gammel") in view of Wieck (U.S. 6,625,238).

Regarding claims **45, 46, and 68**, *Gammel* teaches the self-testing of line card shown in Figure 2 having a digital signal processor and having a transmit path (channel) as well as a receive path (channel) both having amplifiers (within element 7536), which paths are coupled to a SLIC (combined channel) as shown in Figure 2.

Gammel also teaches the tone generator of the digital signal processor produces a tone signal (test signal) for transmission toward and testing of the tip and ring lines (toward SLIC combined channel) as spoken of on column 7, line 58-65.

Gammel also teaches the detection of reflected signals (resulting signal) by the digital signal processor in order to detect whether a particular switch is faulty (malfunctioning) as spoken of on column 7, line 65 – column 8, line 5.

While *Gammel* further teaches the filtering in the transmit and receive paths via transmit and receive filters as shown in Figure 1, *Gammel* does not teach "the receive channel having one or more filters and a filter bypass" as well as "selecting, by a switch, either at least one of the one or more filters or the filter bypass to include in the receive channel".

However, *Wieck* teaches the use of receiver circuitry in Figure 7, where an RF switch and bypass component 702 is used in a bypass mode to bypass first filter 703 and RF amplifier 704 components as spoken of on column 17, lines 5-45.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given these references, to apply the filter bypass mechanism of *Wieck* to the filtering of *Gammel* in order to provide a system offering selective filtering capability that is responsive to signal strength and integrity requirements.

Regarding claim **47**, *Gammel* further teaches the comparison of test routine results (detected signals) with predefined test limits (expected signals) as spoken of on column 11, lines 1-3.

Regarding claim **48**, *Gammel* further teaches the filtering in the transmit and receive paths as shown in Figure 1.

Regarding claim **49**, *Gammel* further teaches the filtering in the transmit and receive paths as shown in Figure 1 as well as the comparison of test routine results (detected signals) with predefined test limits (expected signals) as spoken of on column 11, lines 1-3.

Regarding claim **51**, *Gammel* further teaches the open circuit test spoken of on column 7, lines 58-62.

Regarding claim **52**, *Gammel* further teaches switches sw2 and sw4 within the SLIC (combined channel) as shown in Figure 2.

Regarding claim **53**, *Gammel* further teaches the use of switches sw2 and sw4 in the open circuit test spoken of on column 7, line 58 – column 8, line 5.

Regarding claim **54**, *Gammel* further teaches the open circuit test spoken of on column 7, line 58 – column 8, line 5.

4. Claims **1, 2, 4, and 7-16** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Gammel et al.* (U.S. 5,974,363) (hereinafter “*Gammel*”) in view of *McMillian et al.* (U.S. 6,229,814) (hereinafter “*McMillian*”) in view of *Li* (U.S. 2002/0118819) and in further view of *Wieck* (U.S. 6,625,238).

Regarding claim 1, *Gammel* teaches a line card in Figure 2 having a digital signal processor as shown.

Gammel also teaches the line card having a transmit path (channel) as well as a receive path (channel) both having amplifiers (within element 7536), which paths are coupled to a SLIC (combined channel) as shown in Figure 2.

Gammel also teaches an AC interface and current sensor elements (electrical components) within the SLIC (combined channel) as shown in Figure 2.

Gammel also teaches switches sw2 and sw4 within the SLIC (combined channel) as shown in Figure 2.

Gammel also teaches where the tone generator of the digital signal processor produces a tone signal (test signal) for transmission toward and testing of the tip and ring lines (toward SLIC combined channel) as spoken of on column 7, line 58-65.

Gammel also teaches the detection of reflected signals (resulting signal) by the digital signal processor in order to detect whether a particular switch is faulty (malfunctioning) as spoken of on column 7, line 65 – column 8, line 5.

While *Gammel* also teaches the use of terminating resistance in forward loop testing as spoken of on column 6, lines 30-37, *Gammel* does not explicitly teach “terminating the combined channel with a termination network, the termination network having a desired impedance”.

However, *McMillian* teaches a system in Figure 3 used for DSL line testing, where tip and ring leads of a test bus 80 (combined channel) are coupled to link impedance simulation circuits 71 and 75 (termination network) comprising resistor-

capacitor networks that are controllably configured to provide a prescribed test bus termination impedance as spoken of on column 4, line 59 – column 5, line 4.

These references are considered to be analogous art in that they are both concerned with the use of test signaling to detect fault conditions in a network environment.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given these references, to apply the termination network teachings of *McMillian* to the above teachings of *Gammel* in order to provide effective testing of the tip and ring portions of the line while spoofing the presence of a network or customer interface, thereby reducing the amount of overhead sent over the data network.

While *McMillian* teaches that the above termination network may be configured to provide particular test bus impedance, *McMillian* does not explicitly teach where the desired impedance is approximately equal to a characteristic impedance of a communication line conventionally used with the line card, and where this characteristic impedance is 100 ohms.

However, *Li* teaches where the impedance of a subscriber line in the xDSL band is known to fall in the range of 100-135 ohms as spoken of on page 3, paragraph 31.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given these references, to combine the impedance teachings of *Li* with the teachings of *Gammel* in view of *McMillian* to provide a termination circuit having matched impedance that provides accurate testing of a DSL system.

While *Gammel* further teaches the filtering in the transmit and receive paths via transmit and receive filters as shown in Figure 1, *Gammel* does not teach "the receive channel further comprising one or more filters and a filter bypass" as well as "selecting, by a second switch, either at least one of the one or more filters or the filter bypass to include in the receive channel".

However, *Wieck* teaches the use of receiver circuitry in Figure 7, where an RF switch and bypass component 702 is used in a bypass mode to bypass first filter 703 and RF amplifier 704 components as spoken of on column 17, lines 5-45.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given these references, to apply the filter bypass mechanism of *Wieck* to the filtering of *Gammel* in order to provide a system offering selective filtering capability that is responsive to signal strength and integrity requirements.

Regarding claim 2, *Gammel* further teaches the receive path and transmit path coupled to the SLIC (combined channel) via an AC interface (hybrid) as shown in Figure 2.

Regarding claim 4, *Gammel* further teaches the receive path and transmit path coupled to the SLIC (combined channel) via an AC interface (connector) as shown in Figure 2.

Regarding claim 7, *Gammel* further teaches where the tone generator of the digital signal processor produces a tone signal (test signal) for transmission toward and testing of the tip and ring lines (toward SLIC combined channel) as spoken of on column 7, line 58-65.

Regarding claims 8-10, *Gammel* further teaches the detection of reflected signals (resulting signal) by the digital signal processor in order to detect whether a particular switch (component) is faulty as spoken of on column 7, line 65 – column 8, line 5.

Regarding claims 11 and 12, *Gammel* further teaches the filtering in the transmit and receive paths as shown in Figure 1.

Regarding claim 13, *Gammel* further teaches switches sw2 and sw4 within the SLIC (combined channel) as shown in Figure 2, as well as the detection of reflected signals (resulting signal) by the digital signal processor in order to detect whether a particular switch is faulty (malfunctioning) as spoken of on column 7, line 65 – column 8, line 5.

Regarding claim 14, *Gammel* further teaches the comparison of test routine results (detected signals) with predefined test limits (expected signals) as spoken of on column 11, lines 1-3.

Regarding claim 15, *Gammel* does not teach a termination network formed on the line card.

However, *McMillian* teaches the link impedance simulation circuits 71 and 75 (termination network) of the multi-circuit line card shown in Figure 3.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given these references, to apply the termination network teachings of *McMillian* to the above teachings of *Gammel* in order to provide effective testing of the tip and ring portions of the DSL line while spoofing the presence of a network or

customer interface, thereby reducing the amount of overhead sent over the data network.

Regarding claim 16, *Gammel* does not teach a termination network formed external to the line card.

However, *McMillian* teaches the link impedance simulation circuits 71 and 75 (termination network) of the multi-circuit line card shown in Figure 3.

McMillian does not explicitly teach where the termination network is external to the line card.

However, it would have been obvious to someone of ordinary skill in the art, given the teachings of *McMillian*, to have the termination circuit external rather than internal to the system in order to make the termination network modular in design for use with testing multiple line cards.

5. Claims 55-62, 64-67, and 69-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Gammel et al.* (U.S. 5,974,363) (hereinafter "*Gammel*") in view of *McMillian et al.* (U.S. 6,229,814) (hereinafter "*McMillian*") and in further view of *Wieck* (U.S. 6,625,238).

Regarding claim 55, *Gammel* teaches a line card in Figure 2 having a digital signal processor as shown.

Gammel also teaches the line card having a transmit path (channel) as well as a receive path (channel) both having amplifiers (within element 7536), which paths are coupled to a SLIC (combined channel) as shown in Figure 2.

Gammel also teaches switches sw2 and sw4 within the SLIC (combined channel) as shown in Figure 2 used for testing as spoken of on column 7, lines 58-62.

Gammel also teaches where the tone generator of the digital signal processor produces a tone signal (test signal) for transmission toward and testing of the tip and ring lines (toward SLIC combined channel) as spoken of on column 7, line 58-65.

Gammel also teaches the detection of reflected signals (resulting signal) by the digital signal processor in order to detect whether a particular switch is faulty (malfunctioning) as spoken of on column 7, line 65 – column 8, line 5.

Gammel further teaches the filtering in the transmit and receive paths as shown in Figure 1.

While *Gammel* also teaches the use of terminating resistance in forward loop testing as spoken of on column 6, lines 30-37, *Gammel* does not explicitly teach “terminating the combined channel with a termination circuit, the termination circuit having an impedance and comprising one or more resistors and one or more capacitors”.

However, *McMillian* teaches a system in Figure 3 used for DSL line testing, where tip and ring leads of a test bus 80 (combined channel) are coupled to link impedance simulation circuits 71 and 75 (termination network) comprising resistor-capacitor networks that are controllably configured to provide a prescribed test bus termination impedance as spoken of on column 4, line 59 – column 5, line 4.

These references are considered to be analogous art in that they are both concerned with the use of test signaling to detect fault conditions in a network environment.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given these references, to apply the termination network teachings of *McMillian* to the above teachings of *Gammel* in order to provide effective testing of the tip and ring portions of the line while spoofing the presence of a network or customer interface, thereby reducing the amount of overhead sent over the data network.

While *Gammel* further teaches the filtering in the transmit and receive paths via transmit and receive filters as shown in Figure 1, *Gammel* does not teach "the receive channel further comprising one or more filters and a filter bypass" as well as "selecting, by a second switch, a path for the resulting signal through either one of the filters or the filter bypass".

However, *Wieck* teaches the use of receiver circuitry in Figure 7, where an RF switch and bypass component 702 is used in a bypass mode to bypass first filter 703 and RF amplifier 704 components as spoken of on column 17, lines 5-45.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given these references, to apply the filter bypass mechanism of *Wieck* to the filtering of *Gammel* in order to provide a system offering selective filtering capability that is responsive to signal strength and integrity requirements.

Regarding claim 56, *Gammel* further teaches the detection of reflected signals (resulting signal) by the digital signal processor in order to detect whether a particular switch is faulty (malfunctioning) as spoken of on column 7, line 65 – column 8, line 5.

Regarding claim 57, *Gammel* further teaches the filtering in the transmit and receive paths through filter components as shown in Figure 1.

Regarding claims 58 and 59, *Gammel* further teaches the comparison of test routine results (detected signals) with predefined test limits (expected signals) as spoken of on column 11, lines 1-3.

Regarding claim 60, *Gammel* teaches a line card in Figure 2 having a digital signal processor as shown.

Gammel also teaches the line card having a transmit path (channel) as well as a receive path (channel) both having amplifiers (within element 7536), which paths are coupled to a SLIC (combined channel) as shown in Figure 2.

Gammel also teaches switches sw2 and sw4 within the SLIC (combined channel) as shown in Figure 2 used for testing as spoken of on column 7, lines 58-62.

Gammel also teaches where the tone generator of the digital signal processor produces a tone signal (test signal) for transmission toward and testing of the tip and ring lines (toward SLIC combined channel) as spoken of on column 7, line 58-65.

Gammel also teaches the detection of reflected signals (resulting signal) by the digital signal processor in order to detect whether a particular switch is faulty (malfunctioning) as spoken of on column 7, line 65 – column 8, line 5.

Gammel further teaches the filtering in the transmit and receive paths as shown in Figure 1.

While *Gammel* also teaches the use of terminating resistance in forward loop testing as spoken of on column 6, lines 30-37, *Gammel* does not explicitly teach "a termination circuit operable to terminate the combined channel".

However, *McMillian* teaches a system in Figure 3 used for DSL line testing, where tip and ring leads of a test bus 80 (combined channel) are coupled to link impedance simulation circuits 71 and 75 (termination network) comprising resistor-capacitor networks that are controllably configured to provide a prescribed test bus termination impedance as spoken of on column 4, line 59 – column 5, line 4.

These references are considered to be analogous art in that they are both concerned with the use of test signaling to detect fault conditions in a network environment.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given these references, to apply the termination network teachings of *McMillian* to the above teachings of *Gammel* in order to provide effective testing of the tip and ring portions of the line while spoofing the presence of a network or customer interface, thereby reducing the amount of overhead sent over the data network.

While *Gammel* further teaches the filtering in the transmit and receive paths via transmit and receive filters as shown in Figure 1, *Gammel* does not teach "wherein the transmit channel comprises a filter and an associated switch operable to bypass the filter. However, *Wieck* teaches the use of receiver circuitry in Figure 7, where an RF

switch and bypass component 702 is used in a bypass mode to bypass first filter 703 and RF amplifier 704 components as spoken of on column 17, lines 5-45.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given these references, to apply the filter bypass mechanism of *Wieck* to the filtering of *Gammel* in order to provide a system offering selective filtering capability that is responsive to signal strength and integrity requirements.

Regarding claim 61, *Gammel* further teaches the use of terminating resistance in forward loop testing as spoken of on column 6, lines 30-37.

Regarding claim 62, *Gammel* further teaches an AC interface and current sensor elements (electrical components) within the SLIC (combined channel) as shown in Figure 2.

Regarding claim 64, *Gammel* further teaches the receive path and transmit path coupled to the SLIC (combined channel) via an AC interface (hybrid) as shown in Figure 2.

Regarding claim 65, *Gammel* teaches a line card in Figure 2 having a digital signal processor as shown.

Gammel also teaches the line card having a transmit path (channel) as well as a receive path (channel) both having amplifiers (within element 7536), which paths are coupled to a SLIC (combined channel) as shown in Figure 2.

Gammel also teaches switches sw2 and sw4 within the SLIC (combined channel) as shown in Figure 2 used for testing as spoken of on column 7, lines 58-62.

Gammel also teaches where the tone generator of the digital signal processor produces a tone signal (test signal) for transmission toward and testing of the tip and ring lines (toward SLIC combined channel) as spoken of on column 7, line 58-65.

Gammel also teaches the detection of reflected signals (resulting signal) by the digital signal processor in order to detect whether a particular switch is faulty (malfunctioning) as spoken of on column 7, line 65 – column 8, line 5.

Gammel further teaches the filtering in the transmit and receive paths as shown in Figure 1.

While *Gammel* also teaches the use of terminating resistance in forward loop testing as spoken of on column 6, lines 30-37, *Gammel* does not explicitly teach “terminating the combined channel with a termination circuit, the termination circuit having an impedance and comprising one or more resistors and one or more capacitors”.

However, *McMillian* teaches a system in Figure 3 used for DSL line testing, where tip and ring leads of a test bus 80 (combined channel) are coupled to link impedance simulation circuits 71 and 75 (termination network) comprising resistor-capacitor networks that are controllably configured to provide a prescribed test bus termination impedance as spoken of on column 4, line 59 – column 5, line 4.

These references are considered to be analogous art in that they are both concerned with the use of test signaling to detect fault conditions in a network environment.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given these references, to apply the termination network teachings of *McMillian* to the above teachings of *Gammel* in order to provide effective testing of the tip and ring portions of the line while spoofing the presence of a network or customer interface, thereby reducing the amount of overhead sent over the data network.

While *Gammel* further teaches the filtering in the transmit and receive paths via transmit and receive filters as shown in Figure 1, *Gammel* does not teach "wherein the transmit channel comprises a filter and a filter bypass, and further comprising selecting, by a second switch, a path for the test signal". However, *Wieck* teaches the use of receiver circuitry in Figure 7, where an RF switch and bypass component 702 is used in a bypass mode to bypass first filter 703 and RF amplifier 704 components as spoken of on column 17, lines 5-45.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given these references, to apply the filter bypass mechanism of *Wieck* to the filtering of *Gammel* in order to provide a system offering selective filtering capability that is responsive to signal strength and integrity requirements.

Regarding claim 66, *Gammel* teaches a line card in Figure 2 having a digital signal processor as shown.

Gammel also teaches the line card having a transmit path (channel) as well as a receive path (channel) both having amplifiers (within element 7536), which paths are coupled to a SLIC (combined channel) as shown in Figure 2.

Gammel also teaches switches sw2 and sw4 within the SLIC (combined channel) as shown in Figure 2 used for testing as spoken of on column 7, lines 58-62.

Gammel also teaches where the tone generator of the digital signal processor produces a tone signal (test signal) for transmission toward and testing of the tip and ring lines (toward SLIC combined channel) as spoken of on column 7, line 58-65.

Gammel also teaches the detection of reflected signals (resulting signal) by the digital signal processor in order to detect whether a particular switch is faulty (malfunctioning) as spoken of on column 7, line 65 – column 8, line 5.

Gammel further teaches the filtering in the transmit and receive paths as shown in Figure 1.

While *Gammel* also teaches the use of terminating resistance in forward loop testing as spoken of on column 6, lines 30-37, *Gammel* does not explicitly teach "a termination circuit operable to terminate the combined channel".

However, *McMillian* teaches a system in Figure 3 used for DSL line testing, where tip and ring leads of a test bus 80 (combined channel) are coupled to link impedance simulation circuits 71 and 75 (termination network) comprising resistor-capacitor networks that are controllably configured to provide a prescribed test bus termination impedance as spoken of on column 4, line 59 – column 5, line 4.

These references are considered to be analogous art in that they are both concerned with the use of test signaling to detect fault conditions in a network environment.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given these references, to apply the termination network teachings of *McMillian* to the above teachings of *Gammel* in order to provide effective testing of the tip and ring portions of the line while spoofing the presence of a network or customer interface, thereby reducing the amount of overhead sent over the data network.

While *Gammel* further teaches the filtering in the transmit and receive paths via transmit and receive filters as shown in Figure 1, *Gammel* does not teach "wherein the receive channel comprises one or more filters and an associated switch for selecting either one of the one or more filters or selecting bypass of the one or more filters". However, *Wieck* teaches the use of receiver circuitry in Figure 7, where an RF switch and bypass component 702 is used in a bypass mode to bypass first filter 703 and RF amplifier 704 components as spoken of on column 17, lines 5-45.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given these references, to apply the filter bypass mechanism of *Wieck* to the filtering of *Gammel* in order to provide a system offering selective filtering capability that is responsive to signal strength and integrity requirements.

Regarding claims **67 and 69-72**, *Gammel* further teaches the detection of reflected signals (resulting signal) by the digital signal processor in order to detect whether a particular switch is faulty (malfunctioning) as spoken of on column 7, line 65 – column 8, line 5.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable Gammel et al. (U.S. 5,974,363) (hereinafter "Gammel") in view of McMillian et al. (U.S. 6,229,814) (hereinafter "McMillian") in view of Li (U.S. 2002/0118819) in view of Wieck (U.S. 6,625,238) and in further view of Itri (U.S. 6,909,781).

Regarding claim 3, *Gammel* in view of *McMillian* in view of *Li* in view of *Wieck* teaches the limitations described above.

Gammel in view of *McMillian* in view of *Li* in view of *Wieck* does not teach where the one or more electrical components in the combined channel comprise a transformer.

However, *Itri* teaches a DSL line testing system in Figure 8 containing a scaling transformer coupled to hybrid 218.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given these references, to use a scaling transformer as in *Itri* in the system of *Gammel* in view of *McMillian* in view of *Li* in view of *Wieck* in order to provide a way to adjust the voltage of incoming and outgoing signals to an appropriate level.

7. Claim 63 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gammel et al. (U.S. 5,974,363) (hereinafter "Gammel") in view of McMillian et al. (U.S. 6,229,814) (hereinafter "McMillian") in view of Wieck (U.S. 6,625,238) and in further view of Itri (U.S. 6,909,781).

Regarding claim 63, *Gammel* in view of *McMillian* in view of *Wieck* teaches the limitations described above.

Gammel in view of *McMillian* in view of *Wieck* does not teach where the one or more electrical components in the combined channel comprise a transformer.

However, *Itri* teaches a DSL line testing system in Figure 8 containing a scaling transformer coupled to hybrid 218.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given these references, to use a scaling transformer as in *Itri* in the system of *Gammel* in view of *McMillian* in view of *Wieck* in order to provide a way to adjust the voltage of incoming and outgoing signals to an appropriate level.

Response to Arguments

8. Applicant's arguments with respect to the previous objections of claims **46 and 67-72** have been fully considered and are persuasive. These objections have been withdrawn.

9. Applicant's arguments with respect to claims **1-4, 7-16, 45-49, and 51-72** in view of the prior art of record have been considered but are moot in view of the new ground(s) of rejection provided above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL J. MOORE, JR., whose telephone number is (571)272-3168. The examiner can normally be reached on Monday-Friday (7:30am - 4:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pankaj Kumar can be reached at (571) 272-3011. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Michael J. Moore, Jr./
Primary Examiner, Art Unit 2467